

What is Claimed is:

- 1 1. A wireless communication system protocol comprising:
2 a wireless MAC layer providing for MAC layer acknowledgments; and
3 a TCP layer providing for TCP layer acknowledgments, wherein at
4 least some TCP layer acknowledgments are buffered by the wireless MAC layer
5 and appended to a MAC layer acknowledgment of another MAC layer message.
- 1 2. The wireless communication system protocol of Claim 1 wherein
2 the wireless MAC layer is a modified CSMA/CA layer.
- 1 3. The wireless communication system protocol of Claim 1 wherein
2 the appending of a TCP layer acknowledgment to a MAC layer acknowledgment is
3 done under conditions of asymmetrical traffic.
- 1 4. The wireless communication system protocol of Claim 1 wherein
2 the combined MAC layer acknowledgment and TCP layer acknowledgment does
3 not need to contend for the wireless medium.
- 1 5. The wireless communication system protocol of Claim 1 wherein
2 the TCP layer acknowledgments are done in response to messages from another
3 node.
- 1 6. The wireless communication system protocol of Claim 5 wherein
2 the other node appends an acknowledgment of the transmitted TCP layer
3 acknowledgment along with another message transmitted by the other node.

1 7. The wireless communication system protocol of Claim 1 wherein a
2 MAC acknowledgment is sent to provide MAC layer acknowledgment of receipt
3 of TCP acknowledgment appended message.

1 8. The wireless communication system protocol of Claim 1 wherein
2 the TCP acknowledgment is sent only when link quality is very good.

1 9. A method operating a MAC layer comprising:
2 obtaining a TCP acknowledgment from a TCP layer, the TCP layer
3 producing the TCP acknowledgment when a predetermined number of TCP
4 messages are received;
5 buffering the TCP acknowledgment; and
6 appending the TCP acknowledgment to a MAC acknowledgment of
7 another message.

1 10. The method of Claim 9 wherein the MAC layer comprises a
2 modified CSMA/CA protocol.

1 11. The method of Claim 9 wherein the other node appends another
2 acknowledgment to a message in response to the TCP acknowledgment.